

CLAIMS

1. Device for plasma treatment of large-volume components with a vacuum chamber (3), with one or more pumps, with a transport device (2) for conveying the component (1) into the vacuum chamber (3),
with isolation (4) between the component (1) and the vacuum chamber (3),
with a resonant circuit with a high-frequency generator (5),
with an adjustable capacitance and an adjustable inductance of the resonant circuit,
with at least one terminal for connecting the resonant circuit with the component (1).
2. Device according to claim 1, wherein the transport device comprises one or more rails (2) and a drive system.
3. Device according to claim 2, wherein the rails (2) comprise electrical isolation (4) which isolates the component (1) with respect to the vacuum chamber (3).
4. Device according to claim 1, 2 or 3, wherein the resonant circuit comprises one or multiple high-frequency lines (8) and that the vacuum chamber (3) is provided with high-frequency bushings (9) with electrical isolation for the high-frequency lines.
5. Device according to one of the preceding claims, wherein the vacuum chamber (3) is provided with metal plates (10) and/or grids.

6. Device according to one of the preceding claims, wherein the high-frequency generator (5) comprises a feedback coil (11) with adjustable inductance.
7. Device according to one of the preceding claims, wherein switches are provided for capacitances (12) and/or inductances (14) which are connected with the resonant circuit to tune the capacitance and/or the inductance of the resonant circuit to the component (1).
8. Device according to one of the preceding claims, wherein a transmitting tube (16) for feeding the alternating current into the resonant circuit is provided.
9. Method for plasma treatment of large-volume components, in particular by using a device according to one of the preceding claims, wherein
the component (1) is positioned in a vacuum chamber (3) and the vacuum chamber is evacuated,
the component (1) is connected to a resonant circuit with a high-frequency generator (5),
that the inductance and/or the capacitance of the resonant circuit is tuned to the component (1).
10. Method according to claim 9, wherein the contact between the component (1) and the resonant circuit is monitored by feeding a high-frequency alternating current at low power into the resonant circuit.
11. Method according to claim 9 or 10, wherein an industrial gas is fed into the vacuum chamber (3).

12. Method according to claim 9 or 10, wherein a liquid is vaporized and fed into the vacuum chamber through a valve.
13. Method according to one of claims 9 through 12, characterized in that an alternating voltage at 0.8 to 10 MHz is fed into the resonant circuit via the high-frequency generator (5).
14. Method according to one of claims 9 through 13, wherein the vacuum chamber (3) is evacuated to a pressure between 0.05 and 0.5 Pa.
15. Method according to one of claims 9 through 14, wherein panels (10) and/or grids are positioned in the vacuum chamber (3).
16. Method according to one of claims 9 through 15, wherein the plasma on the surface of the component (1) is adjusted by variation of the anode voltage of a transmitting tube which feeds the alternating current into the resonant circuit.
17. Method according to one of the claims 9 through 16, wherein additional capacitances (12) and/or inductances (14) in the resonant circuit are used for the rough tuning of the resonant circuit to the component (1).
18. Method according to one of claims 9 through 17, wherein the inductance of the feedback coil (11) of the resonant circuit is varied for the fine-tuning of the resonant circuit to the component (1).

19. Method according to one of claims 9 through 18, wherein the inductance and the capacitance of the component (1) are determined, and the inductance and the capacitance of the resonant circuit are adjusted to the inductance and capacitance of the component.